Year in Review Issue
1985

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Attention: Development Office

The Year in Review

The Children's Hospital, founded in 1869, is a voluntary, nonprofit teaching hospital affiliated with Harvard Medical School. The largest pediatric hospital in the country, it is dedicated to patient care, research, and teaching, and offers comprehensive health care services for patients from birth through young adulthood.

Children's children: *Amy Kwan, age 4*

1985: Activities and Accomplishments

"Watch Us Grow": Building for better child care

Cranes and excavation equipment became familiar sights at the hospital in the spring when groundbreaking began for Children's new inpatient facility. Scheduled to open in late 1987, the new facility will help Children's Hospital to better fulfill its missions in patient care, research, and teaching. Among the facility's features are larger patient rooms to more easily accommodate modern patient care equipment and rooming-in space for parents. On many floors, children will be grouped by age to help centralize age-specific treatment protocols and provide a better recovery environment for older patients. Specialized rooms for treatments such as bone marrow transplantation, and new areas for surgery, radiology, and emergency services, are planned. Renovations are also planned for present hospital buildings.

To accommodate hospital traffic for the duration of construction, a new patient drop-off area was created on Blackfan Street in the spring, with a connecting road to Binney Street.

Celebration. In lieu of a traditional groundbreaking ceremony, Children's hosted in July the "Watch Us Grow" party, a celebration for more than 500 former and current Children's Hospital patients and their families.

Tents, colorful balloons, and dozens of costumed cartoon characters transformed a section of the construction site into a magical wonderland for children. Guests were treated to amusement rides, live music, celebrity visits, refreshments, and other activities.

An 18-by-26 foot sign announcing the advent of the new hospital, painted by more than 200 of Children's inpatients and bearing their signatures, was unveiled during the event. The sign will be displayed on site throughout the construction period.

A signage system using the "Watch Us Grow" theme was also created for the construction site. Special plexiglass windows were installed in the wood fence surrounding the site so that visitors can watch the building's progress.

Construction continues. All major excavation work was completed in August. Pouring of concrete to form footings, foundations, and slabs began in July and continued until the end of the year.

Trustees and other invited guests attended an October 1 ceremonial laying of the foundation, where guests were invited to smooth a portion of the concrete that will serve as part of the foundation for the new building. On that day, the final construction contract was signed by Children's and Turner Construction Company.

Above: Director of Facility Planning Rudman Ham (left) and Blackfan Project Coordinator David Peck examine a preliminary architectural model of the new inpatient facility that was made in spring 1985. The curved, pillared front entrance is visible.
Left: Below the tents, games, and balloons of the "Watch Us Grow" party in July 1985, a view of the construction site offered patients and their families glimpses of Children's future.

Children's children: *Kerline Jean-Gilles, age 2*

Strides in patient care

The hospital's goal of providing the best possible child health care was realized in many ways during 1985, from the application of innovative treatment methods to the establishment of new outpatient programs.

AIDS committees. One area of patient care to receive a great deal of attention this year was the care of children with Acquired Immune Deficiency Syndrome (AIDS). In response to the growing number of children with the disease, Children's formed an AIDS Management Committee to address issues surrounding the clinical care and management of these patients. An AIDS Advisory Committee formed in 1984 is examining other issues such as employee training and information.

Advances in leukemia therapy. Great strides were made in the treatment of certain childhood leukemias and immune function diseases, such as severe combined immune deficiency syndrome (SCIDS). One such advance is the ability to accomplish bone marrow transplantation for patients for whom a fully matched donor is not available. Half-matched bone marrow transplants may now be performed with the application of a new technique that uses monoclonal antibodies to remove T-lymphocytes, which can react against the recipient, from the donor marrow.

Above: Stephen Clarke, 20, former leukemia patient at Children's, reminisces with Catee Tressy, R.N. (left) and Dorothy Patton, R.N., head nurse on Division 28. Clarke is now healthy and attends college.
Right: A healthy Allison Cohen, seated with sister Lindsay (left), is just one of the young patients who has received successful bone marrow transplants at Children's.

Before this technology was developed, a child required a donor sibling whose bone marrow exactly matched (an event that occurs only one in four times between siblings); now there may be the potential to perform bone marrow transplantations for all children who require them.

Another Children's victory over leukemia was signaled with the closing results of a four-year combination chemotherapy program, producing among the highest success rates in the country.

Based on the treatment of approximately 300 patients, Children's physicians found that an existing drug, which had been dismissed for ineffectiveness in the treatment of leukemia, has a positive effect when used intensively in children. The "rediscovered" drug – asparaginase – works by removing a serum protein called asparagine, which is necessary to feed leukemic cells. These cells literally "starve" in patients receiving the drug for a six-to-nine-month period in combination with other chemotherapeutic agents.

Cardiac care. In every discipline, Children's staff are mindful of the special care required by infants, whose delicate body systems are at their most critical stage of development.

One advance that reflects this effort is an alternative treatment for neonatal patent ductus arteriosus (PDA), a life-threatening heart condition occurring in premature infants. Until recently, PDA babies underwent surgery to correct the condition, which occurs when the fetal heart channel fails to close after birth, preventing normal oxygenation of blood in the lungs.

Surgical correction has proved successful in many cases, but for any infant, open heart surgery carries a certain risk. A national study led by Children's physicians found that an intravenous form of the drug indomethacin, called Indocin I.V., is 80 percent effective in closing the channel. As a result of the comprehensive study, Indocin I.V. was approved this year by the Food and Drug Administration for treatment of PDA, thus eliminating the risk posed by open heart surgery.

The emphasis on finding better alternatives to surgery was also demonstrated this year by Children's interventional cardiac catheterization program.

Using catheterization, cardiologists can now correct a wide spectrum of cardiovascular malformations, such as underdeveloped pulmonary arteries, coarctation (narrowing) of the aorta, and valve narrowings, that previously could be repaired only by surgery. The program, which began two years ago with a patient load of 10 cases and a 50 percent success rate, this year demonstrated an 81 percent success rate and is the largest such program in the world.

New outpatient programs. New outpatient programs created during 1985 serve as an example of Children's commitment to every aspect of child health care.

In October, a multidisciplinary program for deaf and hearing-impaired (DHI) children and their families was opened by the Boston Children's Deafness Network at Children's Hospital. Called the Family Evaluation and Informational Program, the new service provides a comprehensive approach to the management of newly diagnosed DHI children and their families.

The program will promote early and effective communication through sign language, residual hearing, and speech. Families will also be helped to better understand the medical, psychological, and educational implications of severe hearing loss through written and audiovisual information about deafness and hearing impairment.

Other new outpatient clinics established during the year include: a Growth and Nutrition Clinic to assess and treat children with organic and nonorganic growth deficiencies; a Birth Defects Service to provide coordinated management of the care of children with multiple birth defects; and a Respiratory Care Clinic to serve children who need outpatient follow-up for respiratory problems.

Because of improved surgical and medical techniques for treating congenital heart disease, patients like Joshua Shairs, age 4, have an excellent chance for a normal life. Joshua is pictured here with his father, George.

One For All Fund: An established tradition

In February, the employee-staff Allocations Committee met to distribute a record amount of $62,435 collected during the 1984 One For All Fund campaign. A substantial amount—$32,583—was donated to the United Way, with the balance being distributed to more than 70 local, national, and international charities. Employees and staff members have demonstrated strong support for the 1985 campaign, which got underway in October. As *Children's World* went to press, nearly $63,000 had been raised.

Children's children: *Elizabeth Hansen, age 2*

Institutional developments

Children's continued to strengthen institutional relationships both internally and externally in 1985.

Employee Opinion Survey. Since its doors first opened, one of Children's most important goals has been responsiveness to the members of the hospital team.

Employees had an opportunity to formally share with hospital administration their perceptions of their working environment and job satisfaction in July through an employee opinion survey. Later, department heads and supervisors reviewed the survey results with employees and encouraged suggestions for improving problem areas. The suggestions were recorded and incorporated into an action plan designed to make the hospital a better place to work.

Ethics Advisory Committee. This year hospitals nationwide carefully examined their mechanisms for making ethical choices in the treatment of critically ill children. To address these issues at Children's, a multidisciplinary Ethics Advisory Committee was established early in the fiscal year.

The committee functions as a forum for education and discussion, and helps build a foundation for Children's health caregivers to make ethical decisions consistent with the hospital's mission to provide optimal care. The 12-member committee comprises physicians, nurses, and representatives from the areas of administration, chaplaincy, legal counsel, patient relations, and social work. In October 1985, Michael Epstein, M.D., senior associate in Medicine, became chairman of the committee.

Cooperative programs. Children's forged two new cooperative programs with Boston area hospitals this year.

Approval was granted by the state Public Health Council for Children's to join Beth Israel, Brigham and Women's, and New England Deaconess Hospitals in forming the Joint Center for Magnetic Resonance Imaging. A whole-body Magnetic Resonance Imaging Unit will be constructed adjacent to Beth Israel Hospital in 1986. This new technology uses magnetic and radio-frequency fields to image body tissue and to monitor body chemistry. Its advantages over other diagnostic techniques include its ability to image through bone, its noninvasive nature, and the absence of both ionizing radiation and contrast agents.

Approval was also granted for Children's and Brigham and Women's Hospital, Massachusetts General Hospital, and New England Medical Center to form the Boston Center for Heart Transplantation. The consortium will provide the highest level of care for heart transplant patients in a cost-effective manner, and will further educational and scientific collaboration without overtaxing the facilities and staff of any one member institution. The consortium is allowed to perform a total of 22 transplants in each of the next three years.

The Martha Eliot Health Center, a neighborhood health care service of Children's Hospital, was honored when its director, Robert Martin, was named Outstanding Massachusetts Health Center Director for 1985. The award is given annually by the Massachusetts League of Community Health Centers, an association representing 73 health centers in the state.

Poison Control System anniversary. In October, a statewide organization with a special relationship to Children's, the Massachusetts Poison Control System (MPCS), celebrated its 30th anniversary. The MPCS, which has been a national leader in poison control activities, is headquartered at Children's, and its current director, Frederick Lovejoy Jr., M.D., is Children's associate physician-in-chief. The MPCS marked its anniversary by sponsoring a symposium and banquet for toxicologists and poison control center staffs from around the country.

Research highlights

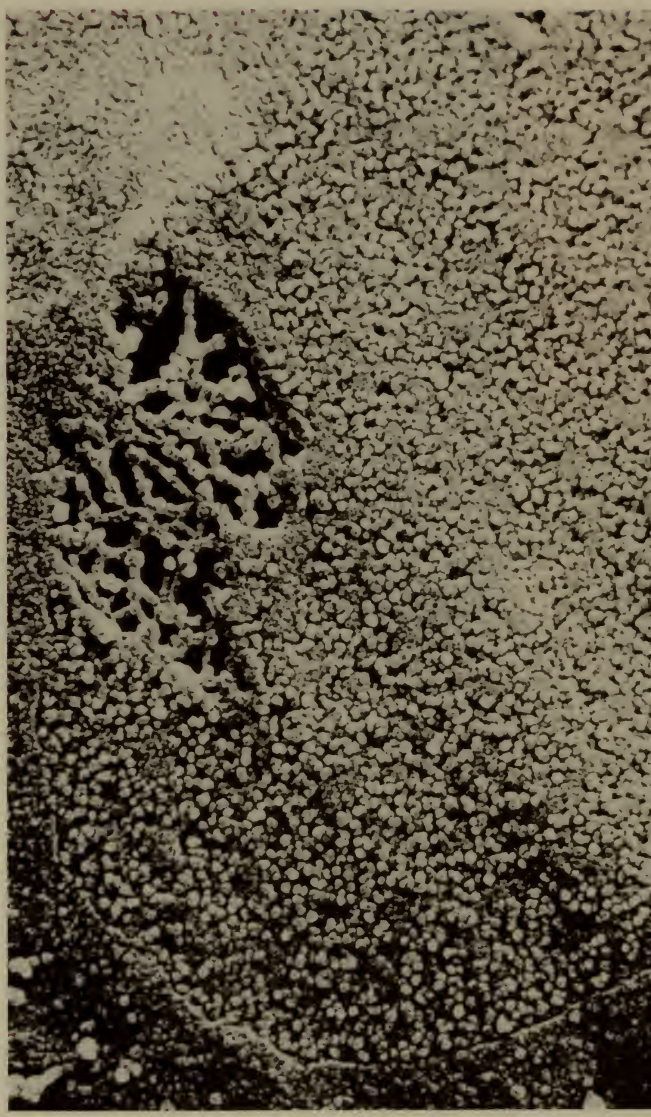
In the world's largest pediatric research facility, the John F. Enders Laboratories for Pediatric Research, Children's investigators conduct basic and applied research into the causes and prevention of childhood illnesses. Working at the forefront of pediatric medicine, these research groups continue to make exciting medical breakthroughs. Some highlights of 1985 follow:

Hematology and Oncology. Research into blood diseases, including blood cancers, continued to make strides this year.

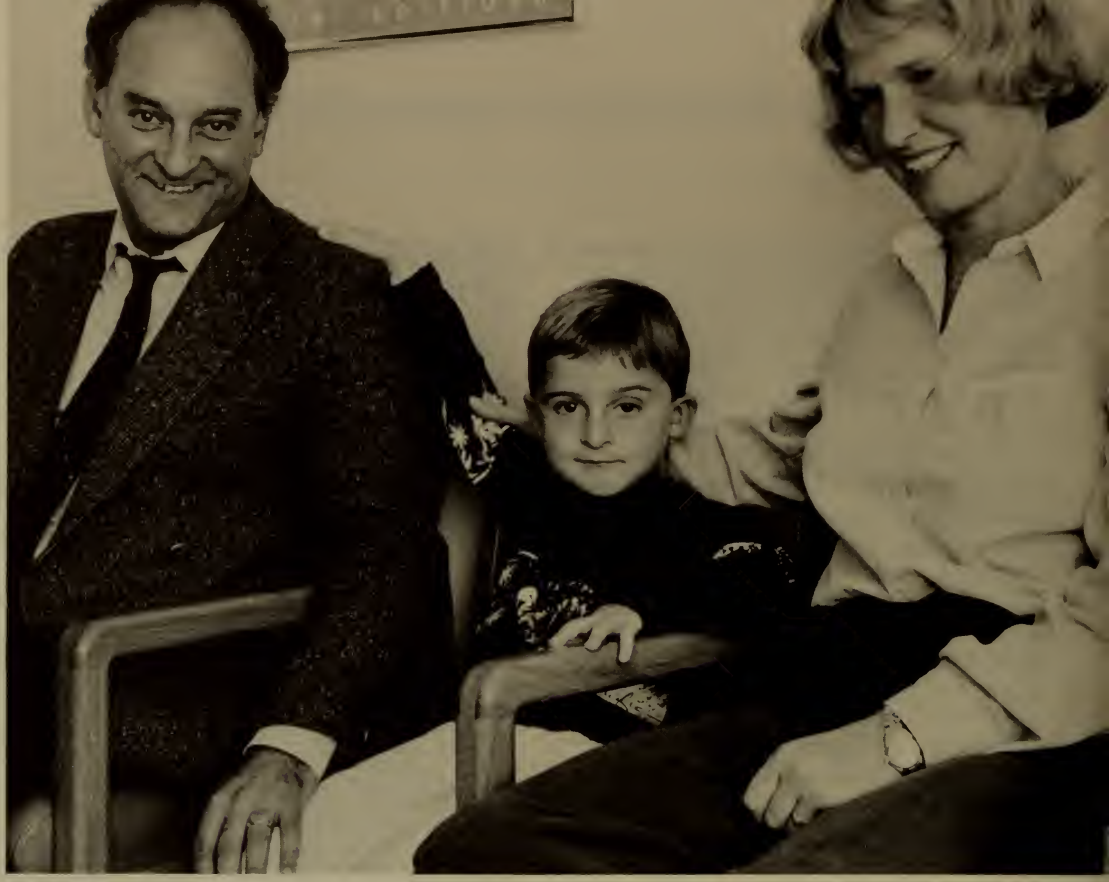
The Hematology and Oncology Division received a National Institutes of Health grant, one of the first of its kind, for basic cellular and molecular studies of the problems encountered in bone marrow transplantation – a therapy used more and more often for blood diseases. Investigators will study engraftment, or how transplanted bone marrow "takes up residence" in its new host; they will examine graft versus host disease to learn how to eliminate it; and they will look at immune dysfunction, or why some patients' immune systems are compromised after successful transplantation.

A focus of attention within the division is inherited blood disorders. Intensive investigation is underway to find a potential cure for adenosine deaminase deficiency, an inherited disorder of the body's immune system, through replacing defective genes with healthy ones. Study of the Von Willebrand factor gene, recently isolated in the division, will aid in understanding Von Willebrand's disease, one of the more common inherited bleeding disorders.

Advances in therapy for thalassemia, a kind of anemia, have been made in the



Left: Frederick Lovejoy, M.D., (right) associate physician-in-chief at Children's and director of the Massachusetts Poison Control System receives an award from Barry Rumack, M.D., president of the American Board of Toxicology, at the MPCS's 30th anniversary celebration. Above: Children's researchers are investigating how defects in red blood cell membranes may contribute to inherited blood disorders. The membrane of this red blood cell has been stripped away, revealing proteins beneath.



By finding the gene that causes Duchenne muscular dystrophy, Children's researchers hope to help young patients with the disease such as Jacob Geller, 6, shown with his parents.

study of a new drug that rids the body of the excess iron it gains from the frequent blood transfusions necessary to treat this illness. A study of the relationships between inherited blood disorders and defects in red blood cell membranes will shed new light on sickle cell anemia. And, an investigation into the mechanisms responsible for immune-system destruction of blood platelets may help in the future treatment of platelet disorders.

In the Blood Bank, mechanisms for removing antibodies from the blood using plasmapheresis, a process similar to dialysis, are being explored, with possible implications for the treatment of such diseases as multiple sclerosis. Blood Bank staff members also lead a team that will study problems in blood storage by sending blood samples aboard the space shuttle.

Infectious Diseases. The Division of Infectious Diseases was awarded a Rockefeller Foundation Grant this year to become a major center for the study of infectious diseases afflicting children in developing countries.

Their research into viral and bacterial diseases includes work on respiratory syncytial virus infections, the most common viral cause of admission to Children's and the most common virus producing pneumonia and death in developing nations. Another major area of study is dengue fever, an epidemic tropical virus disease. The bacteriologists in the division are currently working on vaccines that will prevent bacterial meningitis.

Research on the prevention of nosocomial or hospital-acquired infections, particularly in neonatal intensive care, is an important part of this division's work. Currently underway are studies of *Staphylococcus epidermidis,* a bacterium that causes infections of intravenous catheters and prosthetic medical devices, and *E. coli,* a major cause of neonatal meningitis.

Neuroscience. Progress has continued in work on the regeneration of severed nerves using artificial "channels" made of polymers that help stimulate the growth of nerve tips. First successfully achieved by Children's neuroscientists three years ago, this method has been used to encourage not only the more rapid regeneration of the peripheral nerves of the limbs, but also regeneration of central nervous system nerve fibers.

This work contradicts theories held for decades that brain and spinal cord nerve fibers cannot regrow once severed. As the work continues, new possibilities are opened up for the rehabilitation of victims of paralysis due to accidents, strokes, heart attacks, and diseases such as multiple sclerosis.

Field studies. In addition to the research that is conducted in laboratories and clinical care areas at Children's, an important body of research is carried out each year in the field: in the neighborhoods of Boston and surrounding communities, across the United States, and even around the world. Two examples of this kind of research—examples that will likely affect pediatric health care in communities near Children's—are the Cooperative Lead Survey and the Childhood Mortality Study.

In the Lead Survey, which is still underway, Children's field researchers are examining the effectiveness of targeted screening for lead poisoning by performing door-to-door surveys in Allston, Brighton, Cambridge, and Lowell. Better programs to combat this serious public health problem, which may affect 1 in 10 preschool children, will result.

In the study, "Racial and Socioeconomic Disparities in Childhood Mortality in Boston," investigators learned that children in this city who are poor and black have a much higher chance of dying than their wealthier or white peers. The results are significant in a city where every child theoretically has access to the most advanced medical care. According to the research group leader, the study serves as a reminder that as new therapies are developed to improve the outcome of illness, concurrent preventive efforts need to address the socioeconomic issues affecting child mortality.

Genetics. Some of the year's newest research avenues at Children's were opened up in the area of genetic diseases. Researchers in the Genetics Division are answering questions such as how chromosome rearrangements that cause genetic disease occur. Another line of inquiry—the study of what happens when deleterious genes copy themselves, or amplify—has implications for predicting the outcome of cancers such as neuroblastoma, a nerve cancer.

Investigators have also learned how to pinpoint, or map, the defects along chromosomes that cause genetic disease. This research spills over into a range of disciplines including Allergy, Hematology and Oncology, Immunology, and Newborn Medicine.

Specific diseases whose genetic causes are now nearer to being deciphered, thanks in part to the work of Children's investigators, include agammaglobulinemia, or the absence of certain antibodies; Duchenne muscular dystrophy, the most common form of muscular dystrophy; and Prader-Willi syndrome, a congenital developmental disorder. The genes that control tissue compatibility, a major factor in the success of organ transplants, are also being mapped.

Investigators have begun to identify mechanisms whereby normal genetic material could be inserted, or transferred, into cells to take the place of defective genes. As more is understood about how genes work in the body, the promise of "gene therapy"—not just for treating the classical genetic diseases, but for many other illnesses—is being explored.

In the future, gene transfer could be used to change cells to enhance medical therapies; for example, to prepare the body for chemotherapy, cells may be altered to be more or less resistant to the drugs used for treatment. The problem of multi-drug resistance has limited the success of some chemotherapies; now, Children's researchers have isolated the gene that plays a role in the development of resistance.

Other genetic technologies such as recombination of DNA are turning up possible new treatments for common illnesses. It was demonstrated at Children's this year that using a recombinant form of IGE—the antibody that causes allergies—can actually prevent allergic reactions, opening up a potential new treatment for allergies.

How gene mix-ups lead to the physical expression of birth defects is also being investigated. An exciting example this year was the demonstration that the extra dose of genes in Down syndrome fetuses causes their cells to be abnormally sticky. With the help of a computer, researchers showed how these sticky cells could hinder normal physical development of the fetus with Down syndrome.

Children's physicians can now obtain diagnostic information for families with suspected genetic illness very quickly, and in turn, can use this information to further their research.

Scientists isolate DNA fragments called "probes," which search out and stick to chromosomes carrying defective genes. The probes can be used to make prenatal diagnoses or to identify which family members carry abnormal genes. Within a few months of isolating a new probe, geneticists can supply information to pregnant women carrying babies who may be at risk for genetic disease.

Cystic Fibrosis. A study was completed in the Division of Cystic Fibrosis (Cell Biology) indicating that doses of steroids appear to protect young cystic fibrosis victims from lung damage, the greatest cause of illness and death among CF victims. Children who took the drug over a four-year period were found to have healthier lungs and to spend less time in the hospital than those in a control group.

Children's children: *Tara Lines, age 2*

Medical and nursing staff news

Nathan becomes physician-in-chief. David G. Nathan, M.D., became physician-in-chief at Children's on January 1, 1985. His appointment ended a 15-month, nationwide search for a successor to Mary Ellen Avery, M.D.

Nathan had served for the past 10 years as chief of the Division of Hematology and Oncology at Children's and as pediatrician-in-chief at the Dana-Farber Cancer Institute. He is also the Robert A. Stranahan Professor of Pediatrics at Harvard Medical School. Recognized throughout the world for his many accomplishments in pediatrics, Nathan has contributed to research in pediatric blood disorders and has helped initiate innovative cancer treatments such as bone marrow transplantation at Children's.

Avery stepped down as physician-in-chief in June 1983 after nine years of service but stayed on until her successor was named. The first woman to serve as clinical chief at Children's and to head a major department at Harvard Medical School, she remains the Thomas Morgan Rotch Professor of Pediatrics at Harvard.

Above: David Nathan, M.D., was appointed Children's phsyician-in-chief in January 1985.

New staff appointments. Appointed to Nathan's former post early this year was Samuel E. Lux, M.D. As chief of the Division of Hematology and Oncology – the largest division at Children's – Lux oversees the research, teaching, and clinical activities of nearly 50 physicians and scientists in the Joint Program in Hematology and Oncology with Dana-Farber Cancer Institute.

Joseph E. Murray, M.D., stepped down as chief of the Division of Plastic Surgery in February, a position he had held since 1972. John Mulliken, M.D, former associate in Surgery, was named acting chief.

In the spring, Gordon Harper, M.D., associate in Medicine and Psychiatry, was appointed director of Inpatient Services for the Department of Psychiatry.

W. Hardy Hendren III, M.D., chief of the Department of Surgery, was named the first Robert E. Gross Professor of Pediatric Surgery at Harvard Medical School on June 3.

The new chair was named for the pioneering pediatric surgeon who served Children's for 25 years as chief of Surgery and then as cardiovascular surgeon-in-chief. Over the past 30 years, Hendren, a former student of Gross, has made significant contributions to pediatric surgery. One of his special interests is reconstructive urology, in which he has initiated many important advances.

C. Norman Coleman, M.D., joined the staff as chief of Radiation Therapy on July 1. Coleman was also named director of the Joint Center for Radiation Therapy (JCRT). His appointments were the result of an international, 18-month search, during which Jay Harris, M.D., served as acting director of the JCRT.

In September, another Harvard Medical School chaired professorship honoring a former member of Children's medical staff was announced.

The Clement Andrew Smith Professorship in Neonatology, the first endowed professorship in neonatology in the world, was named for the neonatologist who gained international recognition for his pioneering work on the respiratory and hematologic problems of the newborn.

Smith, an emeritus member of Children's medical staff, has been associated with the hospital for more than half a century. An incumbent to the chair has not been named.

Service chief system introduced. A new system of medical care supervision, in which a service chief is responsible for the quality of care, teaching programs, and communication with referring physicians for three age-based medical services, was instituted in 1985. Donald Goldmann, M.D., senior associate in Infectious Diseases, was named service chief of the Charles A. Janeway Medical Service for adolescents. Warren Grupe, M.D., chief, Division of Nephrology, was appointed chief of the Kenneth D. Blackfan Medical Service for school-age children, and Kenneth McIntosh, M.D., clinical chief in Infectious Diseases, became chief of the Thomas Morgan Rotch Medical Service for infants and toddlers.

Clinical advancement for nurses. A newly created staff position to acknowledge nurses with an advanced level of expertise was initiated with the Department of Nursing's Clinical Advancement Program. The first nurses to be promoted to Staff Nurse III were Ann Colangelo, R.N., Denise Maguire, R.N., and Martha McDermott, R.N., of the Neonatal Intensive Care Unit; Maribeth Hayes, R.N., of the Emergency Room; and Mary Riley, R.N., of the adolescent orthopedic division.

Maribeth Hayes, R.N., shown with patient Keon Pierre Jules, 3, was one of several Children's nurses promoted to a new staff level, Staff Nurse III, in 1985.

Sharing knowledge. Members of Children's medical and nursing staff regularly travel throughout the country and around the world to deliver lectures and teach courses, to spread the knowledge and practice of pediatrics to their colleagues and to the public.

Other times, staff members bring medical care to children in poor and developing countries. Sponsored by the charitable organization Por Cristo, a group including seven professionals from Children's devoted 10 days in January 1985 to the Hospital de Ninos Alejandro Mann in Guayaquil, Ecuador.

Over the past five years, this group has helped build a modern intensive care unit, train the hospital's medical personnel in current treatment techniques, and provide state-of-the-art care for thousands of Ecuadorian children. For his efforts on behalf of this project, Robert Pascucci, M.D., associate director of the Multidisciplinary Intensive Care Unit (MICU), won Por Cristo's "Man of the Year" award.

Another MICU staff member, Betty Normandin, R.N., volunteered six months in Ethiopia, bringing medical relief and aiding food distribution to children in that drought-stricken country.

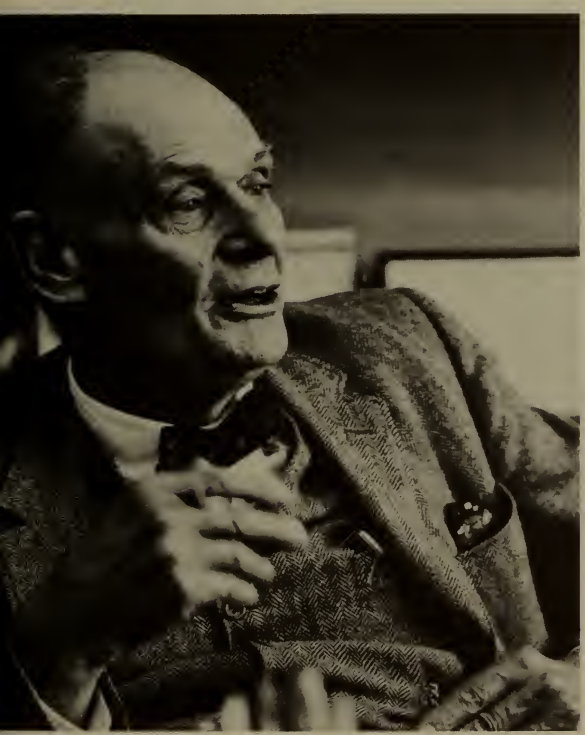
At home in Boston, Children's Hospital showed its commitment to sharing knowledge of advances in pediatric care by co-hosting the 20th annual conference of the Association for the Care of Children's Health. Entitled "The Future of Child Health Care," the May 1985 conference featured workshops, seminars, and panel discussions, many of which were led by Children's staff members, on topics such as children's adaptation to disabilities, legal and ethical issues, and family participation in health care.

Other major conferences included those hosted by the Departments of Nursing and Cardiology. The three-day nursing conference in November 1984, "Professional Practice: Family-Centered Pediatric Care," was attended by 450 pediatric nurses from across the country. An international group of cardiologists came to Boston in May 1985 for "Three Days of Cardiology," co-sponsored by Children's Department of Cardiology and the Council on Cardiovascular Disease in the Young of the American Heart Association.

In memoriam. The sudden deaths of two members of the medical staff in March was a great loss to their colleagues and to the hospital. John Aldridge, M.D., Ph.D., assistant in Medicine, had made significant contributions to the understanding of population genetics during his nine years at Children's. Edward Riseborough, M.D., senior associate in Orthopaedic Surgery, was a founding member of the Scoliosis Research Society and an authority on spinal diseases and scoliosis.

John Franklin Enders, Ph.D., Nobel prize laureate and inspirational teacher to aspiring virologists at Children's for more than 40 years, died in September at the age of 88. Enders is best remembered for culturing the polio virus in 1949 with his colleagues Frederick Robbins, M.D., and Thomas Weller, M.D., paving the way for a polio vaccine and the virtual eradication of this paralytic and fatal disease within a decade.

Vaccines against measles, German measles, and mumps were also products of Enders' work at Children's. In 1976, Children's honored Enders by naming after him its research building, the largest pediatric research facility in the world. Enders worked in his new laboratory until he was 80 years old, and remained senior consultant in Infectious Diseases at Children's until his death.



Publication highlights. During the past year, Children's staff members made important contributions to both the scientific community and the public at large by publishing practical and technical books. Following is just a sampling of the many publications:

Ethics in Psychology. Co-written by Gerald Koocher, Ph.D., director of training in Psychology, this book discusses professional ethical standards and covers the full range of topics in service delivery and research. It includes more than 300 case examples. The book is published by Random House.

Everyone Here Spoke Sign Language. Written by Nora Groce, Ph.D., fellow, Family Development, and published by Harvard University Press, this book examines the medical and social implications of hereditary deafness on Martha's Vineyard.

Headaches and Migraine in Childhood. This book, written by Charles Barlow, M.D., neurologist-in-chief, consists of a review of the topic based on interviews with 300 patients. It is published by Blackwell Scientific Publications, Oxford and J.B. Lippincott Co., Philadelphia.

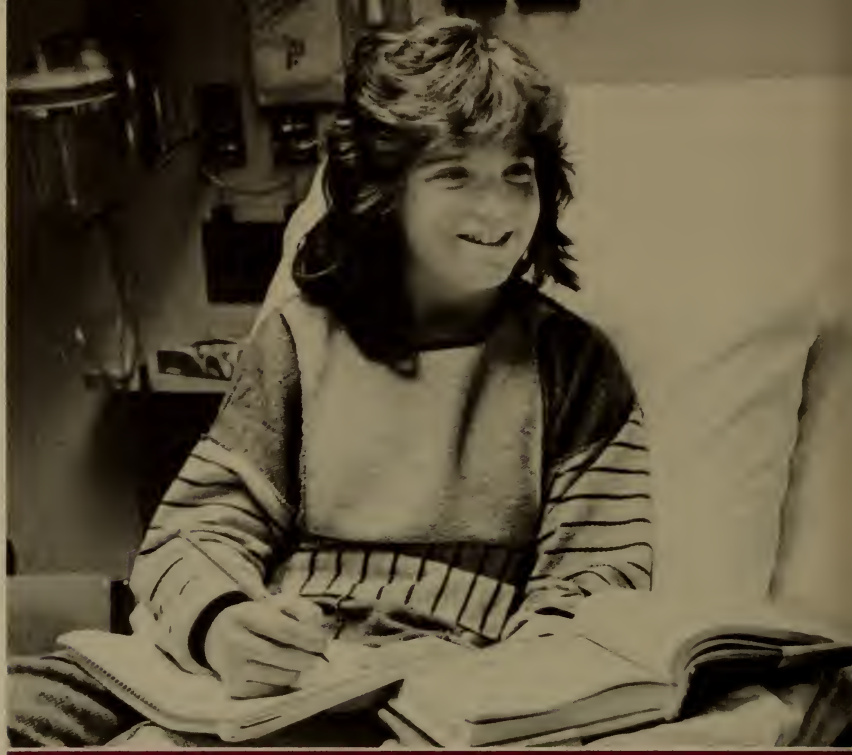
History of the Care and Feeding of the Premature Infant. This book, written by Thomas Cone Jr., M.D., senior associate in Medicine and Genetics emeritus, focuses on important historical issues related to premature infants.

Manual of Pediatric Therapeutics. This manual, used by house staff throughout the world, was compiled by Children's physicians and edited by John Graef, M.D., associate in Medicine, and Thomas Cone Jr., M.D.

Nursing Care of Children and Families. Authors Carole Arenge, R.N., head nurse, Division 29, and Judith Surveyer Mitiguy, R.N., coordinator, Surgical Liaison Programs, contributed to this pediatric nursing text published by Addison-Wesley.

Nutrition and Feeding of Infants and Toddlers. This book was edited by Rosanne Howard, M.P.H., R.D., director of Nutrition Training in the Developmental Evaluation Clinic, and Harland Winter, M.D., assistant in Gastroenterology and Nutrition. The authors explore practical and scientific issues playing a role in infant and toddler feeding in today's society.

Nobel laureate John Enders, Ph.D., senior consultant in Infectious Diseases at Children's, died in September 1985.



Children's children: *Barbara Regan, age 15*

Pediatric Nuclear Medicine. Author S. Ted Treves, M.D., chief, Division of Nuclear Medicine, emphasizes indications, proper methodology, computer applications, and radiopharmaceutical dosimetry in nuclear medicine as they apply to children. The book reflects in great part the practice of pediatric nuclear medicine at The Children's Hospital during the past 14 years.

Solve Your Child's Sleep Problems. This book, written by Richard Ferber, M.D., director of the Center for Pediatric Sleep Disorders, Department of Neurology, provides practical guidance to parents dealing with a sleepless child. It also focuses on developing good sleeping patterns in a child and on examining sleep rhythm disturbances and other sleep problems.

Survival: A new approach from the life sciences to the major problem of our time. This book, written by Richard Van Praagh, M.D., director of Cardiac Pathology and Embryology Laboratory, and published by Falcon Press, addresses vital issues affecting human survival.

Unhappy Families: Clinical and research perspectives on family violence. This book, edited by Eli H. Newberger, M.D., director of the Family Development Study, and Richard Bourne, J.D., Ph.D., associate counsel at Children's, is a collection of insightful articles on the topic of family violence. It is published by PSG Publishing Company.

Working and Caring. Written by T. Berry Brazelton, M.D., chief, Division of Child Development, and published by Addison-Wesley, this book provides working parents with insight on how to raise children. The book also advises working parents on key issues related to day care and substitute care for children.

Children's staff members were also involved in the production of documentaries. For example, "Code Gray: Ethical Dilemmas in Nursing," a film produced by Fanlight Production Company in collaboration with Christine Mitchell, R.N., ethicist in the Staff Development and Research Department, was nominated for an Academy Award in the Documentary Short Subject category.

The film documents four situations in which nurses confront profound ethical dilemmas in their work. The film also received First Prize in the San Francisco International Film Festival and the *American Journal of Nursing* Media Awards.

Management changes

In October 1984, senior management changes were made to strengthen the hospital's fundraising arm, and to support the hospital's parent corporation in developing and operating nonpatient care facilities and real estate properties.

John O. Wilhelm Jr. became senior vice president for Finance for the Children's Medical Center and executive vice president of Children's Enterprises and Fenmore Realty Corporation, two of the Medical Center's subsidiaries. For the hospital, Roger G. Roux was promoted to vice president for Finance, and David Estridge was promoted to vice president for Development and Public Affairs.

In March 1985, Carol Weinrib was appointed vice president of the Children's Medical Center, with responsibility for expanding the role of the Medical Center in the community.

Children's Hospital League contributions

1985 was a banner year for League member efforts in support of the hospital. In July, the Children's Hospital League made a donation of $240,000 to Children's, which was raised through the 1984 Festival for Children's Hospital and the Thrift Shop.

In December, the League's third annual Festival for Children's Hospital celebrated the 1985 holiday season at the Bayside Exposition Center. The featured attraction again this year was the wonderland of professionally decorated trees and wreaths, which were donated by such prominent establishments as Bloomingdale's, Saks Fifth Avenue, and the New England School of Art and Design.

Festival goers also enjoyed the dozens of gift boutiques featuring handcrafted items and homemade foods, and entertainment by clowns, magicians, and jugglers. Proceeds from the Festival admission fee and the sale of the decorated trees and gift items were donated to Children's.

The League also continued its ongoing support of many hospital programs including the Summer Garden Program in Patient Activity, summer camperships in Social Service, and the Foster Grandparents Program, Art Cart, Greenhouse, and Window Painting in Volunteer Services.

Left: Zachary Hamilton, 1, enjoys a sip of punch at the "Hawaiian Luau," one of many summer garden programs made possible in 1985 by the League.
Above: Chester d'Autremont, M.D., senior associate in Psychiatry, and his wife, Ruth, a hospital overseer, were among 5,000 visitors admiring the decorated trees at the League's Festival for Children's Hospital.

Overseer/Trustee activities

New appointments. At the December 1984 Annual Meeting of the Board of Trustees, George H. Labovitz, Ph.D., was elected a trustee and Mrs. Harris J. Nelson was appointed an overseer. Labovitz is a professor of Organizational Behavior and Management at the Boston University School of Management and is president of Organizational Dynamics, Inc. He has had a longstanding relationship with the hospital through his late son, David, who was treated for cystic fibrosis at Children's.

Nelson, a volunteer at Children's since 1937, has been a strong supporter of the hospital for many years. In 1981, she provided for the establishment of the House Officers' Center.

In January, George Hench Butcher III was appointed an overseer. A partner in the Boston law firm of Palmer and Dodge, Butcher serves on the Committee on Financing of Health Care Facilities of the National Association of Bond Lawyers.

In June, Douglas E. Hart, a principal in the investment management firm of Marsh & Cunningham, was appointed to the newly created position of director of the Board of Overseers. As director, he will encourage a service-oriented membership of the board and active overseer participation in hospital affairs and at community functions. Hart will also serve as an overseer representative to the Board of Trustees to enhance communication between the two groups.

Massachusetts Commissioner of Public Health Bailus Walker Jr., Ph.D., M.P.H., was featured speaker at the fourth Children's Hospital Annual Dinner.

Annual dinner. The fourth Children's Hospital Annual Dinner, held on April 23 at the Museum of Fine Arts, drew more than 200 overseers, trustees, League members, administrative and medical staff members, and other guests. The evening's featured speaker was Commissioner of Public Health Bailus Walker Jr., Ph.D., M.P.H., who discussed how public health programs can supplement and complement hospital efforts on behalf of children.

Chairman of the Board David I. Kosowsky, Sc.D., presented the 1985 Chairman's Award to Overseer F. Murray Forbes for his 53 years of "long, steadfast, and devoted leadership." Serving as treasurer of the Children's Hospital Corporation for 20 years and as vice president for 7 years, Forbes has raised more money for the hospital than any other individual.

Phillips, Jones step down. Two trustees stepped down from the Board in 1985. After two years as a trustee, Anna Faith Jones resigned upon accepting an appointment as director of the Boston Foundation, the largest community charitable fund in New England.

Treasurer and Vice Chairman of the Board George W. Phillips tendered his resignation in June, due to his new appointment as vice chairman of Shearson/American Express, based in New York. As chairman of the hospital's Finance Committee, Phillips helped to substantially increase Children's total investment pool, to manage its assets aggressively, and to maximize their value through sound investment practices.

Tour and briefing. On October 23, more than 30 overseers and donors attended a hospital tour and briefing. Guests viewed the Blackfan Project site and were briefed by Director of Facility Planning Rudman Ham on the construction progress of the new patient care facility.

This briefing was followed by a tour of three inpatient areas – the Clinical Research Center, the Pre-Op and Recovery Rooms, and operating rooms – where clinical personnel explained their respective areas and answered questions. The event concluded in the Gardner House with a presentation on advances in bone marrow transplantation.

WBZ-Children's Hospital Fund

The WBZ-Children's Hospital Fund completed its sixth year of support for Children's by encouraging a record number of donations from the people and businesses of New England and beyond.

Many special events were sponsored by businesses, schools, and other organizations. These included such diverse activities as auctions, dances, holiday craft fairs, weight-reduction incentives, and a special Christmas recording by Jordan Marsh with proceeds donated to the hospital. Activities culminated

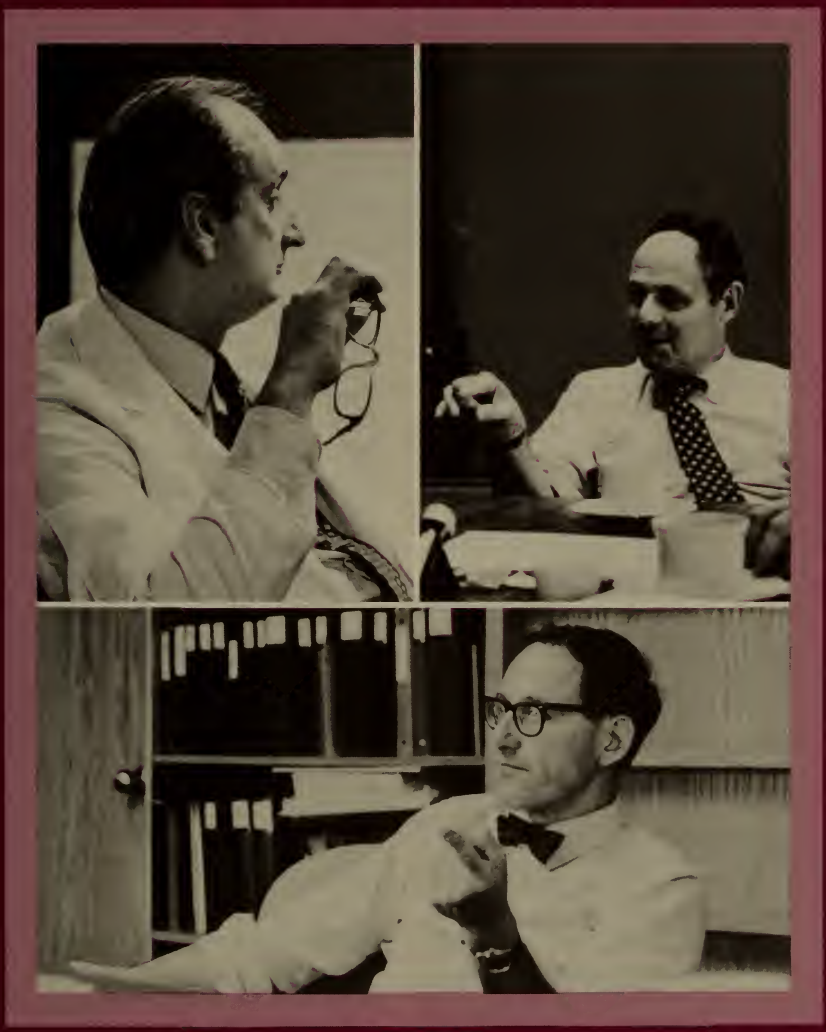
WBZ-TV and Radio personalities visited Children's in November to tape public service announcements for the 1985 Fund.
Above: WBZ-TV news co-anchor Jack Williams gets to know outpatient Jonas Rodriguez, 10.
Left: WBZ-Radio personality Dave Maynard is on camera with patient Anu Singh, 15.

in December with two weeks of live broadcasts from WBZ's Incredible Broadcast Machine at Downtown Crossing, and with the Children's Hospital Telethon on December 14.

Prior to 1985, the Fund had raised more than $1.5 million for Children's. A tally of this year's donations was being made as this issue of *Children's World* went to press, and is expected to push the total above the $2 million mark.

Above: WBZ-TV news reporter Charlie Austin is delighted to meet patient Katie Carmody, 7 weeks old, during a videotaping.
Right: WBZ-TV news co-anchor Liz Walker interviews patient Derek Bolling, 16, during the Telethon.
Below: Austin and WBZ-TV news reporter Jeanne Blake interview patient Ronnie Morrison, 4, and his family for a live cut-in from the lobby at Children's during the Telethon.

Patient Care, Research, and Teaching at Children's: Where Are We, and Where Are We Going?



Patient Care, Research, and Teaching at Children's: Where Are We, and Where Are We Going?

From left, Judah Folkman, M.D., David Nathan, M.D., and Frederick Lovejoy, M.D., during their discussion.

Pediatrics at Children's stands on the brink of breakthroughs whose potential to better the lives of today's and tomorrow's children is tremendous.

New drugs and improved surgical techniques have conquered major obstacles in organ transplantation and brought the gift of life to children with liver and other organ diseases. New research techniques are pinpointing the causes of fatal genetic diseases and revealing possibilities for cure. Treatment for childhood leukemia is so successful now that survival rates are approaching 75 percent.

The high-tech worlds of surgery, pharmacology, and laboratory research are not the only areas where strides are being made. New findings in prevention, and new treatment protocols – for example, allowing families to participate closely in hospital care – constantly improve medical care for children.

Many of these achievements are the direct result of work carried out by Children's researchers, physicians, and other child care specialists. Children's stands as a vital link in the chain of research, teaching, and patient care that contributes to advancement in pediatrics worldwide. And, the future at Children's has never looked better as the institution embarks on its most ambitious effort yet to meet patient needs – the building of a new patient care facility.

Recently *Children's World* provided a forum for three of the hospital's eminent physicians to discuss Children's role in pediatrics past, present, and future. Participating in the discussion were: Director of Surgical Research and former Surgeon-in-Chief Judah Folkman, M.D.; Associate Physician-in-Chief Frederick Lovejoy, M.D.; and Physician-in-Chief David Nathan, M.D.

Children's World: From the physician's standpoint, what makes pediatrics different from other medical disciplines today?

Dr. Nathan: Pediatricians must care about the long-term effects of the treatment they give. This is the toughest part of practicing pediatrics. When pediatricians make a decision about a baby, they do not know the total outcome on the child for a decade or more. This is a tremendous responsibility.

Dr. Folkman: For example, it is now possible to save babies with diaphragmatic hernia whose lungs are so underdeveloped that they would have died without temporary use of the extracorporeal membrane oxygenator. But, will their lung function be normal in the future? These are some of the tough decisions confronting pediatricians and pediatric surgeons today.

What is important is that these new procedures can greatly improve a patient's chances of survival. They can give life back to a baby.

Dr. Nathan

"When pediatricians make a decision about a baby, they do not know the total outcome on the child for a decade or more. This is a tremendous responsibility."
David Nathan, M.D.

Children's World: How have transplantation and other relatively new innovations changed the face of pediatrics?

Dr. Nathan: Transplanting kidneys, livers, and bone marrow means tackling a field and using resources for care that were unheard of in the past. When we perform bone marrow transplantation, the treatment makes the patient desperately sick. This goes on for 60 days, and it's not uncommon to have two nurses caring for the patient simultaneously, because the patient is so sick. But after that enormous investment the patient may be entirely cured.

Dr. Folkman: The single biggest change we've seen on the surgical side is probably the introduction of intravenous feeding, or hyperalimentation. The "lifeline" for intravenous feeding was developed by Dr. Stanley Dudrick in Philadelphia, and was first used here at Children's by Drs. Robert Filler and Angelo Eraklis in 1971. Today, Children's Hospital has the longest and largest experience with the lifeline. This technology has affected every service in the hospital in its ability to get children through illnesses that were previously hopeless.

Children's World: What are some examples?

Dr. Folkman: In the past, children with congenital malformations such as omphaloceles could not withstand the repeated operations necessary to close these big openings in the abdomen. This was because they often could not eat until their abdomens were completely repaired. Now, because of the intravenous feeding line, they can get adequate nutrition while their surgery is performed in slow stages.

I remember a patient who came here at the age of 10 for treatment of chronic intestinal bleeding. She had an intravenous feeding line implanted in her groin for four years while physicians at Children's were treating her intestines. Now she is 20; she is in college and wants to become a nurse. She visits the hospital every few months for blood transfusions.

Dr. Nathan: That is an amazing change. When I was a resident we could not deal with these patients, because we could not support them adequately.

Children's World: What are some of the other major changes and trends in clinical pediatric care over the past 20 years?

Dr. Lovejoy: The disappearance of common viral infectious diseases is a significant trend. Twenty years ago, many patients were admitted to the hospital with measles, rheumatic fever, scarlet fever, whooping cough, and mumps, and accompanying complications such as pneumonia, bronchitis, bronchiolitis, and encephalitis. Today, the impact of vaccination programs is demonstrated by the fact that many medical students and house officers have never seen cases of measles, whooping cough, or mumps.

Dr. Nathan: Now this group of infectious diseases and their complications have almost disappeared. Instead of treating patients with these acute infectious diseases, we now treat those with chronic illnesses complicated by new types of infections and those with acute disorders who must be cared for in the Intensive Care Units.

Dr. Lovejoy: Another major trend is that many chronic pediatric disorders can now be treated on an outpatient basis. Over the years, we have developed treatments in the ambulatory program that really work.

Ten years ago chronic diseases such as cystic fibrosis and leukemia were predominantly inpatient diseases. Now cystic fibrosis patients are no longer admit-

Dr. Lovejoy

ted to the medical service for their regular check-ups. They care for them in physicians' offices and in the ambulatory clinics. Only rarely, when complications ensue, do they require admission to the inpatient service. Patients with leukemia receive a major component of their therapy and check-ups on an outpatient basis.

Dr. Nathan: Iron overload is another condition that can be treated in the ambulatory care clinics. In the past, patients who had to have frequent blood transfusions for anemia regularly died of iron overload. And now, new drugs administered in outpatient clinics can lower the risk of iron overload.

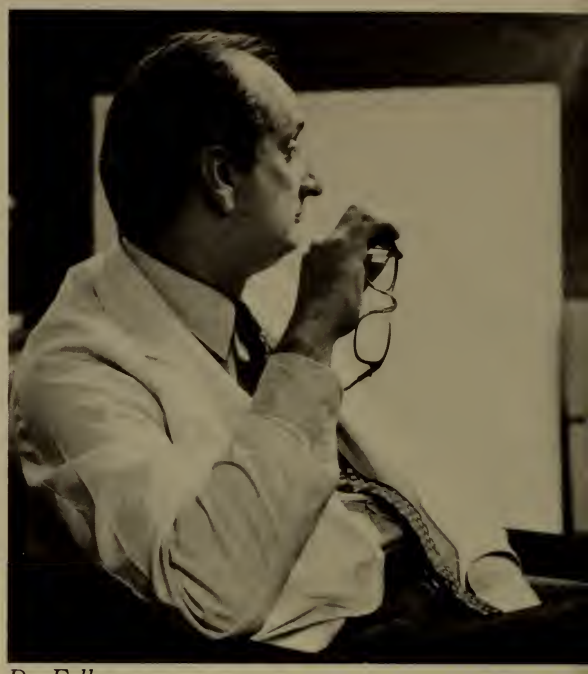
Dr. Folkman: The shortening of hospitalization is another trend. A child diagnosed with a non-perforated appendicitis used to be hospitalized for a week; now such a patient generally leaves the hospital after just three days.

Dr. Lovejoy: Let's not forget the impact of prevention. Injuries such as caustic burn of the esophagus caused by accidental ingestion of caustic household products used to be a very common phenomenon at this hospital. Children were admitted repeatedly for treatment of these injuries. Now we have legislation that mandates a lower percentage of alkali in household agents, and requires safety closures on these products. Pediatricians' preventive and teaching efforts have also contributed to decreasing the number of hospital admissions for accidental poisoning.

Lead poisoning has also declined thanks to better prevention and public education. Each year, we see fewer patients admitted to the hospital for lead poisoning. This is because of better screening programs and serious efforts at the public health and legislative levels to limit the availability of lead-containing paints.

Dr. Nathan: Nutritional illness is another area where preventive efforts by pediatricians have helped. Dramatic progress has also occurred in the care of the neonate. This has had a profound impact at Children's, where we see many newborns living who might have died 15 years ago.

Overall, we are starting to eliminate the acquired diseases, such as lead poisoning, and viral illnesses such as measles and polio. Now we are turning to the treatment of inherited and developmental, rather than acquired, disorders. If we can reduce the



Dr. Folkman

number of accidents and eliminate another unfortunate acquired illness, family-induced trauma, we will succeed in reducing the load of acquired illness still further – unless AIDS gets really terrible. AIDS represents the next big cloud of acquired illness. With it, we are witnessing new diseases such as pneumocystis and cytomegalovirus infection. Until recently, these were all rare conditions that were unheard-of unless they were involved with transplantation. And now some of them are common causes of hospital admission.

Dr. Folkman: What is of concern is that these organisms get tougher and tougher and somehow, as old infections are wiped out, these new, peculiar ones become more firmly entrenched.

Children's World: What changes are on the horizon that will have the greatest effect on patient care?

Dr. Nathan: The big issue for the next decade, and I think the decade beyond, is genetic diseases. We're now at a point at which 40 percent of admissions to Children's are somehow related to inherited disorders. And that's what we're going to be dealing with more and more. Our task is going to be to get every kid up to the starting line, no matter what their biological makeup is at birth. We've got to try to do something about the biology with which they begin, get them up to the starting line, pat them on

"The majority of the children's hospitals in the United States have a chief of surgery who was trained here. This excellence in teaching is also known throughout the world."
Judah Folkman, M.D.

the bottom, and say, "Go!" It won't be easy. But the record here is so strong, I think we can do it.

Children's World: Can you name some of the diseases that this would affect?

Dr. Nathan: Various bone marrow-inherited diseases would be affected by gene therapy. All the immunodeficiencies and the hemoglobin diseases would probably respond well to this treatment if we could manipulate genes successfully. Beyond the bone marrow diseases, it becomes very complicated: the liver diseases, the lung diseases . . . How would you get the gene into the organ you want? Until last year, we could not transfer a gene into the bone marrow. It's now possible, but the real problem will be in regulating the gene – getting it to really work once you transfer it. These are all problems, but gene therapy is coming. We'll see different kinds of gene transfer soon, and it'll happen first in children.

Children's World: Could you discuss some of the major research endeavors at Children's that will affect the future of pediatrics?

Dr. Folkman: There is exciting research on nerve regeneration. A significant development is that researchers in Dr. Richard Sidman's lab are now able to stimulate regeneration in some nerves grown *in vitro.* This was not possible previously. We may be heading toward the time when physicians can take a young child with a damaged spinal cord, transfer nerve sections, and get the spinal cord to grow back. If nerve regeneration will ever work, it will work in children, because it is the younger animals in these studies that have demonstrated the capacity for regeneration.

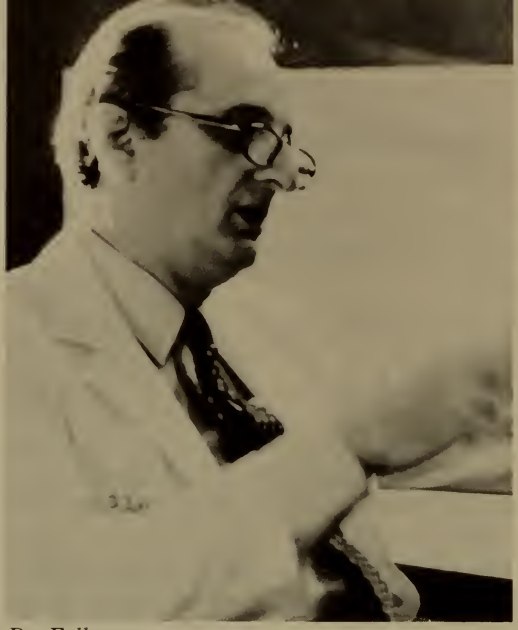
There is also excellent research on blood products. Dr. Stuart Orkin's lab has isolated and cloned a gene that controls Von Willebrand's disease, a kind of hemophilia. We'll begin to see a whole new way of treating clotting deficiencies. This is the future for this hospital, and it's really an extraordinary one.

Dr. Nathan: A measure of how far we've come in blood research is that you see so few children with hemophilia admitted any more. It's because they are getting blood factors as outpatients that prevent them from bleeding. Of course, these factors derived from human blood donors carry a risk – in fact, they carry the risk of AIDS. So we are cloning genes for major blood clotting factors and making them biosynthetically. In the future, we will have absolutely clean, perfect blood factors to give to children.

In genetics there is a lot of good research, such as the work with Duchenne muscular dystrophy done by Dr. Louis Kunkel's group. They're narrowing down the area on the chromosome where the gene for this occurs, and they've developed a way to do successful prenatal diagnosis of the disease.

Dr. Folkman: In the Department of

Dr. Lovejoy



Dr. Folkman

Orthopaedics, Drs. Paul Gallop, Peter Hauska, and Jane Lian have pioneered a new field by discovering osteocalcin, a molecule that helps bone calcification. In the Surgical Research Laboratories, work on angiogenesis – the growth of new capillary blood vessels – has led to the purification of angiogenesis factors, and to the development of angiogenesis inhibitors. In Otolaryngology, Dr. Gerald Healy is directing a national study on the use of interferon to treat papillomas, the warts that occur on the vocal cords and nearly kill children by airway obstruction. These are only a few examples of the type of research this hospital is involved in.

Dr. Lovejoy: Today our research facilities play an increasingly active role in patient care. Observations made in the clinical setting serve as an important stimulus for investigation in the laboratory. In a similar manner, new developments in the laboratory are brought back to the clinical area for confirmation of their usefulness. This is an important, fertile interchange that is critical to the development of new knowledge. It is ultimately to the benefit of our patients.

We can see how well this process works when we look at the developments that have resulted from it – such as rapid tests for the diagnosis of bacterial meningitis, the parenteral hyperalimentation Dr. Folkman spoke of earlier, and the many new immunologic tests used in diagnosing and treating inherited or acquired immunodeficiency syndromes.

Dr. Folkman: Another example is the demineralized bone powder that has been used for reconstructive surgery in almost 300 patients since 1978. Nine surgeons use this powder, which is made by Dr. Julie Glowacki and her associates in the Enders research building. It's an example of a direct link between the laboratory and the clinical area.

Dr. Lovejoy: The practicing pediatrician at Children's has an opportunity to apply new treatments and drugs to his or her patients at a very early stage. These treatments may prolong the lives of patients afflicted with life-threatening diseases.

There are tremendous benefits to the concept of an Enders research building being in close proximity to the clinical care. There is a pervading philosophy at Children's that research is not solely for and unto itself; that it should be translated ultimately into better patient care to fully justify its existence.

Dr. Nathan: Children's has really been a pioneer in applying laboratory research directly to patient care. One of the first instances must have been with Dr. James Gamble's work* in the 1920's on intravenous feedings of electrolytes for children with severe diarrhea. Before that many children with bad summer diarrhea died. Then in the '50's there was Dr. Charles Janeway's work on agammaglobulinemia.* And Dr. John Enders' virology studies* resulted directly in vaccines for polio and measles.

Children's World: How have Children's teaching activities enhanced pediatrics at home and abroad, and what do you think makes teaching here at Children's unique? How does it make us a stronger hospital?

Dr. Lovejoy: There are probably two major elements of teaching at Children's that make it unique and, in the same breath, tremendously exciting. The first, and clearly

*James Gamble, M.D., 1883-1959, was first director of the Metabolic Research Laboratory at Children's. Gamble was a pioneer in the evolution of fluid and electrolyte therapy. His discoveries became the basis for modern methods of intravenous feeding.

Charles Janeway, M.D., 1909-1981, former physician-in-chief at Children's, was among the first to discover that some children die of infection because antibodies found in the gamma globulin part of the blood are missing (agammaglobulinemia).

John Enders, Ph.D., 1897-1985, was chief, Research Division of Infectious Diseases at Children's. Enders and colleagues discovered a method of culturing virus in the laboratory that paved the way for modern vaccines to be developed for viral diseases.

"There are tremendous benefits to . . . research being in close proximity to the clinical care. There is a pervading philosophy at Children's that research is not solely for and unto itself; that it should be translated into better patient care to fully justify its existence."
Frederick Lovejoy, M.D.

the most important, is the view that excellent teaching is essential to the overall mission of the hospital and to the care of our patients. Good teachers are critical to attracting bright students, as well as the most talented interns, into pediatrics. Each applicant for a residency wonders each year, "Is this a place where I can learn? Is there a real commitment to education?"

Second, the sheer volume of students involved in the teaching process sets us apart. Every year over 100 Harvard students take an introductory course in pediatrics; another 100 third- and fourth-year students are involved in the core clinical rotations in pediatrics; and many others pick various electives here in surgery and medicine.

Not just in medicine and surgery alone, but also in radiology, physical therapy, nursing, and many other areas, students are involved on a day-to-day basis in the learning process. Dr. Folkman once said that on any given day the number of students we have here is four times that of Wellesley College. We have a small university training program here at Children's.

Dr. Nathan: Commitment is the issue. Certainly, when we are selecting physicians, commitment to teaching is a major factor. Members of the Children's Hospital faculty have twice won Harvard Medical School's award for excellence in teaching. Right now, a great number of important pediatric positions in this country are held by Children's Hospital graduates. We've done a good job for American pediatrics.

Dr. Folkman: Many of the country's pediatric surgeons were trained here. The majority of the children's hospitals in the United States have a chief of surgery who was trained here. This excellence in teaching is also known throughout the world. Many students from other countries have trained here, blossomed on their own, and come back to teach us their new techniques. And what they say is that the great influence of this hospital is its high standards.

Dr. Nathan: The introduction of the new service chief system is a further commitment to teaching at Children's. Under this system, the hospital is committed to support a senior person managing an age-based medical inpatient service. This provides excellence in teaching and in patient care. I do not think that you can find many other hospitals in the country that make a commitment to having people of professorial rank on a service, supervising. It is a unique decision. The result is that we are improving the training of our house staff.

Dr. Nathan

"The big issue for the next decade, and I think the decade beyond, is genetic diseases . . . We'll see different kinds of gene transfer soon, and it will happen first in children."
David Nathan, M.D.

Children's World: How do you think the new patient care facility that is currently under construction will affect patient care?

Dr. Nathan: One major aspect is that it will have expanded facilities for delivering care safely to children who have diminished resistance to infection. Many of the new treatments for acutely ill children make them temporarily sicker and very susceptible to infections. Our present inpatient facility, the Farley building, was built at a time when these treatments were not used. It has only a small amount of space devoted to this kind of care. So, expanding these facilities is mandatory.

The next issue is that because these children have critical illnesses, they need much more support, including equipment and medical support, and above all, parental support. Pediatricians cannot put a child through some of these major invasive and difficult procedures without the constant emotional support of the family. The Farley building was never designed to permit families to stay in with their children.

Dr. Folkman: In the 1940's and early 1950's, the importance of family support was less appreciated. There were few visiting hours, except on weekends. Visitors were not allowed on the surgical wards, except briefly, because physicians feared the risk of infections, and parents accepted this at the time. Of course, parents can now visit their child at Children's 24 hours a day.

Children's World: For what other reasons is the new inpatient facility a necessity?

Dr. Nathan: The equipment used to treat patients requires considerable space. The bed spaces are simply not large enough in the Farley building to have a doctor, a nurse, the equipment, and a family member next to a patient. So, that consideration also demanded a new facility.

An innovation in the new building is that, for the first time, children will be grouped by age: infants, school-age children, and adolescents. The medical, orthopedic, and surgical divisions for a particular age will all be located on the same floor. This is important because pediatric nursing is highly specialized. The nurses who do brilliantly with a child of a particular age will have an opportunity to stick with that age. We also hope that this will help us become more efficient in staffing.

Dr. Lovejoy: This new plan of horizontalization will facilitate better interchange between residents and faculty on the medical, surgical, and orthopedic services. The specialty floors are designed to allow optimal use of state-of-the-art technologies in caring for our patients.

Children's World: In many ways, the new patient facility is an extension of a philosophy that has always existed here, isn't it?

Dr. Nathan: Yes. The new inpatient building is designed to promote an even better physical and emotional outcome for the children we serve, while greatly increasing the efficiency of medical care.

However, although the building will change the way we give medical care in many ways, some basic aspects will remain the same. Our primary task continues to be to convey confidence and hope to our patients and their families, to let them know we are ready to provide the support they need at a critical time in their lives.

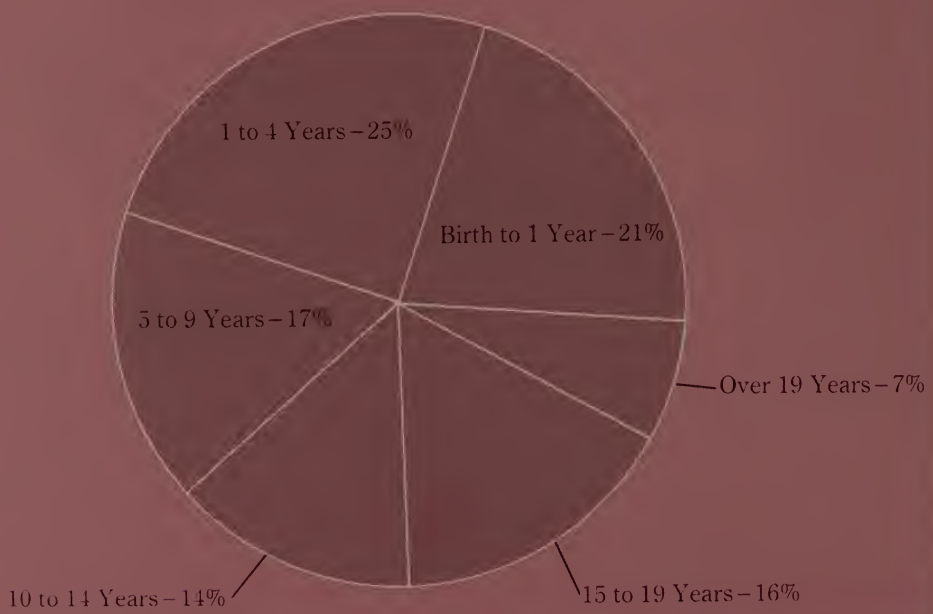
Our ultimate goal at Children's remains the same as it always has been. And that is, to deliver the best available patient care, in the most deeply personal manner possible.

Statistical and Financial Report

Statistics

Patient	1985	1984
Number of licensed beds	**339**	339
Discharges	**14,212**	13,803
Patient days	**100,487**	101,010
Average stay in days	**7.07**	7.32
Clinic visits	**163,590**	160,605
Emergency room visits	**45,929**	47,600
Surgical procedures		
Inpatient	**7,938**	7,794
Outpatient	**3,598**	3,633
Total	**11,536**	11,427
Radiology		
Procedures performed	**73,392**	71,296
Laboratory tests	**1,022,542**	983,592

Age Breakdown

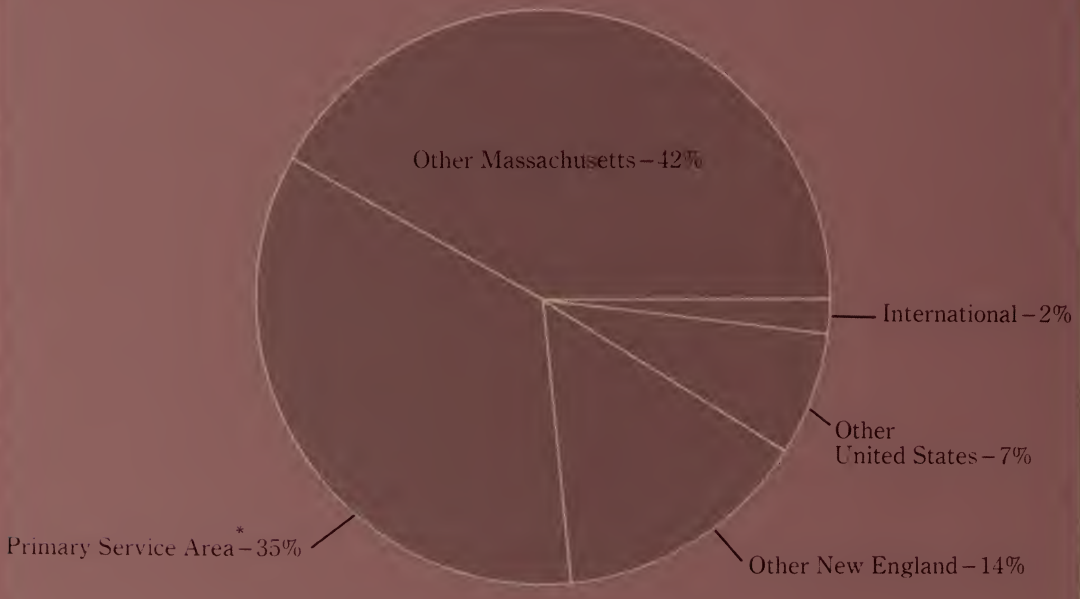


Personnel	1985	1984
Active medical staff	**557**	526
Active dental staff	**15**	14
Associated scientific staff	**162**	156
Courtesy staff	**300**	279
House staff	**441**	454
Consultants	**128**	124
Emeriti	**49**	47
Clinical assistants	**40**	33
Visiting staff	**13**	13
Nursing staff	**753**	755
Other full-time employees	**1,686**	1,655
Other part-time employees	**573**	757
Volunteers	**761**	760

Statements of Revenues and Expenses and Funds Used for Capital Additions

Years ended September 30, 1985 and 1984 (In thousands of dollars)	1985	1984
Statement of Revenues and Expenses:		
Revenues:		
Gross patient services revenue	**$139,339**	$135,925
Deductions from patient services revenue	**19,940**	21,051
Net patient services revenues	**119,399**	114,874
Other operating revenue	**49,774**	46,183
Total operating revenue	**169,173**	161,057
Operating expenses	**166,427**	153,002
Income from operations	**2,746**	8,055
Non-operating income	**4,046**	2,282
Excess of revenues over expenses	**$ 6,792**	$ 10,337
Funds used for capital additions	**$ 7,623**	$ 9,520

Note: The Statement of Revenues and Expenses and Condensed Balance Sheet are excerpted from the audited financial statements and are not intended to provide the information contained in the complete audit report (Auditors: Peat, Marwick, Mitchell & Co.).

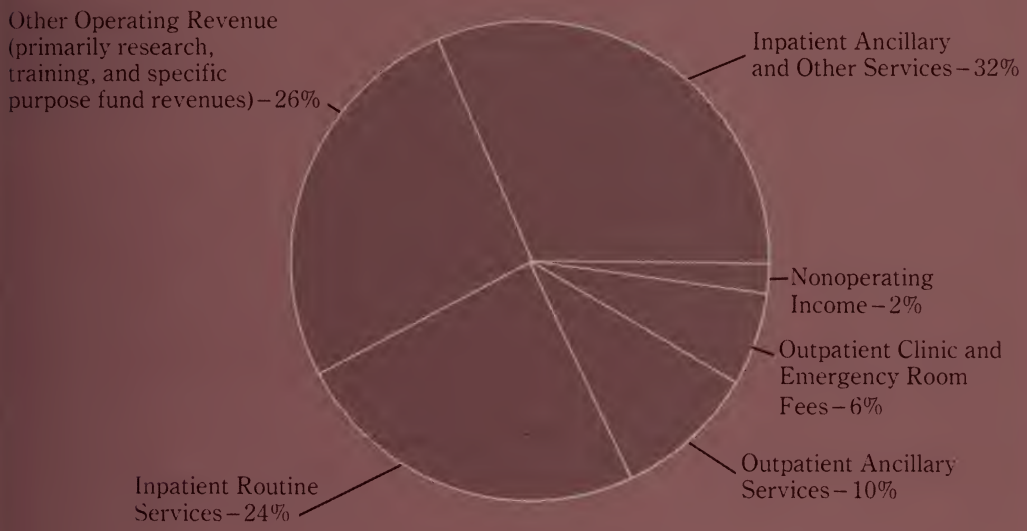


Where Patients Come From

**Includes the following Massachusetts areas: Arlington, Belmont, Boston, Brookline, Burlington, Cambridge, Chelsea, Dedham, Everett, Lexington, Malden, Newton, Revere, Watertown, Wellesley and Winthrop.*

Financial Highlights: Year ended September 30, 1985

Sources of Revenues


Other Operating Revenue (primarily research, training, and specific purpose fund revenues) – 26%
Inpatient Ancillary and Other Services – 32%
Nonoperating Income – 2%
Outpatient Clinic and Emergency Room Fees – 6%
Outpatient Ancillary Services – 10%
Inpatient Routine Services – 24%

Distribution of Expenses

Salaries and Wages – 51%
Energy – 3%
Depreciation and Interest – 4%
Fringe Benefits – 9%
Supplies, Expenses, and Other Purchased Services – 33%

ondensed Balance Sheet:
(In thousands of dollars) September 30, 1985 and 1984

Assets	1985	1984
General funds		
Cash	$ 1,284	$ 1,786
Investments	2,000	2,000
Receivables, net	17,762	18,764
Inventories	825	1,109
Prepaid expenses	547	542
Total	22,418	24,201
Assets held in trust under long-term debt agreements	84,816	83,258
Plant, property, and equipment at cost less accumulated depreciation	67,420	69,587
Other assets	40,551	31,326
Total	215,205	208,372
Restricted funds		
Accounts Receivable	3,222	3,811
Total	$218,427	$212,183

Liabilities and Fund Balances	1985	1984
General funds		
Current:		
Current portion of long-term debt	$ 160	$ 75
Accounts payable and accrued expenses	26,364	22,956
Due to third-party payors	16,514	16,297
Total	43,038	39,328
Long-term debt, excluding current portion	76,880	77,040
Deferred compensation	3,284	2,671
Deferred third-party reimbursement	2,633	2,794
Fund balance	88,693	86,539
Total	214,528	208,372
Restricted funds		
Fund Balances	3,899	3,811
Total	$218,427	$212,183

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Cerebral Palsy Orthopaedic Clinic
Communication Enhancement Clinic
Community Services Program
Comprehensive Child Health Program
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Cystic Fibrosis Clinic
Dental Clinic
Dermatology Clinic
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Developmental Evaluation Clinic
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Diagnostic Evaluation Clinic
Dietary Consultation Program
Down Syndrome: Early Intervention Program for Infants
Early Childhood Program
Educational Assessment and Functional Progress Program
Emergency Services
Endocrine Clinics – Pediatric and Adolescent
Family Development Clinic
Functional Progress Program
G.I./Nutrition Clinic
General Renal Clinic
Genetics Clinic
Genitourinary Clinic
Growth Clinic
Growth and Nutrition Clinic
Gynecology Clinic
Gynecology Nurse Program
Hand Clinic: Combined Orthopaedic – Plastic
Hearing and Speech Division
Heart Disease Prevention Program and Hyperlipidemia Clinic
Hematology Clinic
Hemophilia Clinic
Hypertension Clinic
Infant Follow-Up Program
Lead and Toxicology Clinic
Learning Disabilities Clinic
Liver Transplant Clinic
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Medical Diagnostic Clinic
Medical Nurse Program
Metabolic Bone Disorders Clinic
Metabolism Clinic
Myelodysplasia Clinic
Neurology Clinic
Neurology Nurse Program
Neuromuscular Diseases Clinic
Neuropsychology Testing Services
Neurosurgical Clinic
Nuclear Medicine Division
Occupational Therapy Clinic
Oncology Service, Pediatric
Ophthalmology Clinic
Oral Surgery Clinic
Orofacial Clinic
Orthopaedic Clinic, General
Orthopaedic Nurse Program
Orthoptic Clinic
Ostomy Program
Otolaryngology Clinic
Pacemaker Clinic
Pains and Incontinence Program
Pediatric Consultation Services
Physical Therapy Clinic
PKU: Inborn Errors of Metabolism Clinic
Plastic Surgery Clinic
Podiatry Clinic
Preschool Function Program
Prevocational/Vocational Work Experience Program
Prosthetic Clinic
Protein Clinic
Psychiatry Clinic
Psychology Testing Services
Psychopharmacology Clinic
Psychosomatic Follow-Up Clinic
Pulmonary Clinic
Pulmonary Function Laboratories
Radiation Therapy Department
Radiology Department
Renal Transplant Program
School Function Program
School Health Services

Children's children: *Mengesha Selam, age 9*

Seizure Clinic
Seizure Unit
Seizure Unit Family Services Team
Sexual Abuse Treatment Team
Sleep Disorder Program
Social Service Department
Spanish Team
Spanish School Functions Team
Special Diagnostic Test Center
Spinal Clinic
Sports Medicine Division
Surgical Clinic, General
Surgical Nurse Program
Tumor Program
Urodynamics Laboratory
Vascular Clinic
Weight Control Program
Wrentham State School Contract
Young Adult Congenital Heart Clinic
Young Adult Team
Young Children and Their Parents Development Clinic
Young Parent Program

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Adolescent/Young Adult Medicine
Allergy
Anesthesia
Animal Facility
Blood Bank
Cardiology
Cardiovascular Surgery
Cell Biology
Central Processing
Child Development
Clinical Engineering
Clinical Laboratories
Community Services
Continuing Care
Corporate Planning
Cystic Fibrosis
Dental
Dermatology
Development and Public Affairs
Endocrinology and Metabolism
Environmental Services
Epidemiology
Facility Planning
Fiscal Services
Gastroenterology and Nutrition
General Counsel
General Stores
Genetics
Gynecology
Hearing and Speech
Hematology/Oncology
Hemodialysis
Hospital Engineering
Human Resources
Immunology
Infectious Diseases
Kinesiology
Linen
Management Information Systems
Materials Handling
Materials Management
Medical Records
Medicine
Message Center
Nephrology
Neurology
Neuroscience
Neurosurgery
Newborn Medicine
Nuclear Medicine
Nursing
Nutrition and Food Services
Occupational Therapy
Ophthalmology
Orthopaedic Surgery
Otolaryngology
Parking and Transportation
Pathology
Patient Activity
Patient Relations
Pharmacology
Pharmacy

Children's children: *David Ellis, age 16*

Children's children:
Matthew Obenshain, age 5

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Elisha V. Ashton Trust
Athenian Piraean Association of New England
Friends of Dr. Mary Ellen Avery
Jason S. Bailey Estate
Mabelle G. Balkam Trust
C.R. Bard Inc.
The Barker Foundation Inc.
Bear Stearns & Company
Ethel Bente Estate
Fred E. Bergfors Fund
Estate of Marion S. Bergmann
Biffington's Tavern
Big Sam Falaffel & Catering
Blue Knights Inc.
Boots Celltech Diagnostics Inc.
Helen C. Bosson Trust
Boston Children's Heart Foundation Inc.
The Boston Foundation
Brandanos Restaurant
Robert B. Brigham Trust
Anna Broadhurst Estate
Alice E. E. Buff Trust
Calvert Trust
Marcella P. Campbell Estate
James F. Casey Fund
Children's Committee of Quincy
Children's Hospital Alumnae Association
Children's Hospital League
CHMC Anesthesia Foundation Inc.
William H. Claflin Estate
Geraldine R. Cleveland Estate
Cliflex Bellows Corporation
Coca-Cola Bottling Company of Lowell
Marguerite D. Collins Estate
Component Manufacturing Service
Compugraphic Corporation
Considine Distributing Company
Thomas K. Cory Trust
Estate of Lotta M. Crabtree
Ethel B. Crocker Trust
Everett L. Cuneo Trust
Doris L. Currier Estate
Cystic Fibrosis Foundation
Danversport Yacht Club Inc.
Daughters of Laconia-Boston

Children's children: *Jonathan Jimenez, age 2*

Daughters of Penelope
Nathan & Minnie David Memorial Fund
William W. Davies Trust
Dean Foundation for Little Children
The Hazel Dell Foundation
Digital Equipment Corporation
Estate of Rita V. Dolan
Charles J. Draper Trust
James W. Dunphy Trust
Eaton Foundation
Eggnog Off Benefit
Energy Control Systems Inc.
Erie Scientific/Sybron Corporation
Herbert Farnsworth Trust
Fidelity Foundation
Vain & Harry Fish Foundation Inc.
M. Alice Fountain Estate
The Franzheim Synergy Trust
Gardner Charitable Trust
Friends of James P. Gawle
General Cinema Corporation
General Electric Company, Employees
GenRad Foundation
Estate of Eleanor Gleneskie
Frank B. Gordon Foundation
The Nehemias Gorin Foundation
E.A. Gralia Construction Company
Grand Imports Inc.
Grass Instrument Company
Greek American Political Club
Greek Ladies Philoptochos Society of Boston
Grossman's
Robert Gustin Estate
Hallamore Motor Transportation Inc.
The Joseph M. Hamilburg Foundation
Estate of George W. Handy
Harvard Children's GSD Fund

Marjory K. Hatch Estate
Madeline T. Hawes Estate
Hingham Shoe Inc., Employees
Hollingsworth & Vose Company
The Hopedale Foundation
Henry Hornblower Fund Inc.
Estate of Harold Horvitz
Housewares Club of New England Inc.
Rosamond B. Hunt Trust
Margaret M. Hurley Trust
ICI Americas Inc.
Ierax Association of the U.S.
Interactive Data Corporation
Irish Social Club of Boston
The James Jenks Jr. Trust
John Hancock Charitable Trust
The Howard Johnson Foundation
Johnson & Johnson Family of Companies
Clinton O. & Lura Jones Memorial Trust
Helen Steel Jones Estate
Milton A. & Charlotte R. Kramer Charitable Foundation
The Lebensfeld Foundation
Lend-A-Hand Society
Estate of Alfred V. Lincoln
The Agnes M. Lindsay Trust
Estate of Peter D. Ludy
The Mailman Foundation
Edgar S. Malcolm Estate
Massachusetts Maternity and Foundling Hospital Corporation
Massachusetts Electric Construction Company
Massachusetts Lions Eye Research Fund
Phyllis McGillicuddy Charitable Trust
George P. McNear Jr. Foundation
Leslie N. McPherson Trust
Merchants Cooperative Bank
Mary S. Mulligan Charitable Trust
Mobil Foundation Inc.
Monhegan Sail Inc.
Mosbacher Foundation Inc.
Mr. Tux
Murray Printing Company
Estate of Eileen G. Nagle
National Association for Sickle Cell Disease
New England Critical Care Inc.
NFL Alumni Inc.
Leonard Nimoy Fan Club
NOEMI Aid to Crippled Children
NSL Distributing Inc.
Lottie S. Page Estate
Arthur W. Paine Estate
Pancretan Association of America
Estate of Louise H. Parsons
Seward M. Paterson Estate
The Peabody Foundation Inc.
Joseph Persky Foundation
Trustees U/W G. Gorham Peters
Charles & Cornelia Pfaff Fund
Physical Support Systems Inc.
Harold W. Pierce Charitable Trust
Hilma N. Poth Estate
Andrew W. Preston Charity Fund
Olive Higgins Prouty Foundation
Emma Reid Estate
Charles A. Rheault Jr. Estate
William N. Robbie Estate
Hanay Robinson Collection Ltd.
Ropes & Gray
The Edward and Bertha C. Rose Charitable Trust
Thomas Morgan Rotch Memorial Fund
Sacks & Company
Gertrude H. Savage Trust
Sawyer Charitable Foundation
Arnold Scacciotti Trust
Estate of Marian M. Scarr
Schneider Parker Jakuc Inc.
Seavest Inc.
Segan, Culhane, Nemerov & Green
Sharon Sanitorium
The Lucinda Ellen Shaw Trust
William L. Shearer Trust
Sholley Foundation Inc.
Sharlotte E. Sills Estate
Lucille M. Sinclair Trust
Sam and Norma Smith Fund
Southbridge High School Student Council
Seth Sprague Educational and Charitable Foundation
Standex International Corporation
Estate of Ella M. Stuart
Sudden Infant Death Syndrome Friends
Thermaikos Society
Edna J. Townsend Estate
Ralph H. Tucker Trust
Tweedy & Barnes Company
United Cerebral Palsy Association
VFW Post 2346 Auxiliary
Benjamin F. C. Whitehouse Trust
William B. Wilkes Trust
Winthrop Lodge A.F. & A.M.
Woburn Sports Festival Weekend
Women's Auxiliary M.A.P.H.C.C.
Worcester Court Club
Margaret Wray Estate
Yokota Catholic Parish
William Zakon & Sons Charity Fund

Children's children: *David Wing, age 8*

More than 300 children are tucked into bed at Children's Hospital each night.

With the help of mothers and fathers, medical teams throughout the hospital carry out a nightly ritual that very often includes a bedtime story, a glass of water, a reassuring hug, and a wish for sweet dreams.

Amid the state-of-the-art technology, a highly trained professional staff provides care that is kind and compassionate – an essential ingredient in the healing process.

Children's Hospital has earned an international reputation not only for its medical excellence, but also for just this kind of caring.

Your continuing support will help Children's to go on providing the best medical care possible. It will allow many of our young patients to return home sooner and healthier, to be tucked into their own beds at night. And this will make us all sleep a little easier.

Your contribution is sincerely appreciated. An envelope is attached for your convenience.

The Children's Hospital

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